REMITTENT FEVER.

—BY—

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SYNONYMES—*Bilious Remittent Fever, Bilious Fever, etc.*—Remittent fever, from its serious tendency, extensive prevalence, frequent recurrence and complex nature, possesses, beyond all other diseases, a peculiar and absorbing interest to the Southern physician, and although seen sporadically in a mild form in more elevated latitudes, it still may be emphatically termed the disease of Southern climes. It is with this malady that the young practitioner there will be probably first called upon to combat. It is from ignorance of its

*In cheerful compliance with the request of many of our subscribers, and with the permission of the author, Otis F. Manson, M. D., of Richmond, Professor of Physiology and Pathology in the Medical College of Virginia, etc., we republish this article, contributed to the *Virginia Medical and Surgical Journal* of January, 1855. We do this the more readily as the description of the phenomena of remittent fever, as it occurs in puerperal women, which forms a part of this essay, has been of late the subject of extensive discussion, and possesses important claims upon the notice of the profession. To the new generation of physicians that has arisen, this paper will be as novel as it certainly is as valuable at the present moment as it was at the time it first appeared. We congratulate the writer that the great value of his contributions to practical medicine has been at last, though too tardily recognized by his brethren.—ED.

nature and treatment that many an aspirant has failed to fulfil the prophecies of his young ambition; and veterans, victorious in many conflicts with disease, unmindful of the progress of therapeutics, and disdaining the teachings of a new philosophy, have lost their well-earned laurels.

It is in this disease and its archetypes, above all others, that the efficacy and certainty of remedial agents are most evidently and conspicuously displayed. It is in view of our brilliant and decisive triumphs in its treatment that hydra-headed charlatanry recoils dismayed before the genius of orthodox science; that the skeptic is compelled to admit that "his doubts are traitors," and the loftiest intellects and meanest minds are alike impressed with the might and majesty of our divine art. "Homines ad Deos nulla re proprius accedunt, quam salutem hominibus dando."

Impressed, therefore, as he soon must become, with the vast importance of an intimate acquaintance with this affection, the young physician will learn with astonishment, that there cannot be found in any standard work of our country a correct description of its characteristic features as it now presents itself, or safe and reliable rules for its treatment. It is true that, scattered through the pages of journals, many invaluable articles are to be found, but they are not generally accessible, and if they were, it would be a difficult task for a novice to separate the true from the false, and to form a definite and correct opinion from their scattered and discordant materials. It is deeply to be regretted that this deficiency in our literature exists, and it is from a desire to contribute something to supply it that this article is penned.

General Character.—*Mild Remittent Fever, Synonymes, Chill and Fever, Congestive Chills, etc.—Prodromic Stage.*—The onset of this fever is generally *sudden*, and in cases where premonitory symptoms are present, they are usually of brief duration. The patient has an irrepressible foreboding of evil, is languid, inclined to be drowsy, and disinclined to exertion. He experiences fugitive pains in his head, neck, loins and limbs, and sensations of chilliness are felt running along the spine, and from thence irradiating to the extremities, succeeded by flushes of heat. The appetite fails or is

capricious; the tongue is slightly covered with a white fur; the bowels are generally costive, occasionally alternating with diarrhœa; the urine is copious and limpid, and there is frequent micturition, attended with a sensation of heat in the urethra.

The Invasion.—This is almost invariably ushered in with a *chill*, the sensation of cold varying from the production of an evanescent tremor, to a distinct and prolonged rigor, *which may occur at any hour of the day or night.* This INITIAL *chill* is commonly felt sensibly by the patient, however, and the reduced temperature of the extremities, especially, is evident to the *touch* of the attendant. The patient is restless, sometimes amounting to extreme jactitation. He is thirsty, and complains of a sensation of internal heat; his breathing is accelerated, unequal, and interrupted with sighs; the pulse is frequent, small, and sometimes irregular; pain in some region of the head is usually present, as well as the spine, the latter sometimes very distressing, and constituting the principal suffering of the patient. Nausea and vomiting are occasional symptoms, but according to my observation are not so generally present as it is usually stated. This stage is commonly of short duration and is soon followed by decided reaction.

The Exacerbation.—The skin now becomes hot and dry, the face flushed, and a roseate glow is perceptible over the general surface. The sclerotica is injected and the globe of the eye prominent. The cerebro-spinal pains increase in intensity and assume a throbbing character. The pulse acquires volume, force and regularity, but is almost invariably *compressible.* The respiration becomes slower, more uniform and less laborious. The tongue becomes dryer and more coated, and the secretions of the mouth viscid and tenacious; the thirst continues, but is not usually so urgent as in the chill. These symptoms increase in intensity until they amount to an acme of exquisite suffering, and then gradually decline.

The Remission.—Late in the afternoon, usually between the hours of 5 and 8 in *very mild* cases, but postponed to some period between midnight and sunrise, in more *severe*

attacks, the fever and its concomitants sensibly begin to yield, and the patient sinks exhausted with suffering into a slumber of variable duration, from which he awakes more or less relieved. The skin becomes cooler and relaxed, the tongue moist; the painful sensations abate, and often entirely vanish; the respiration becomes free, and the pulse diminished in frequency and force. This respite from suffering is usually, however, of short duration, being followed by the recurrence of the stage of congestion or chill. As the *succeeding chills*, however, differ in some important features from the initial chill, we devote to them an especial notice.

The Pathognomic Chill of Remittent Fever.—This, according to my observation, *never* occurs between the hours of 9 P. M. and the rising of the sun of the following day, but usually between the hours of 8 A. M. and 12 M., and occasionally between 6 and 8 P. M.

At or near these periods, the watchful attendant will perceive a *sensible diminution of temperature* of the extreme parts, viz., the *nose*, *toes* and *fingers*, or the *whole hands* and *feet* will be found *below* the *natural standard*, being *cool* and *damp*, *the rest of the surface retaining its febrile heat*, more evident in the *cerebro-spinal* and *epigastric* regions. In this condition, the patient *rarely* complains of any sensation of cold, but *often* of heat, desires to be fanned, the clothing to be removed, and entreats for cold drinks. The pulse is frequent, but usually regular; the bowels torpid, but easily excited into action. Nausea and vomiting are sometimes present, the fluids ejected from the stomach being usually of a bilious character. The respiration is not much affected, but the patient yawns and gapes, utters deep sighs, alternating with forcible voluntary expirations. The duration of this stage is usually brief, rarely lasting more than an hour, and is succeeded by the reaction, which is marked by an extension of the febrile heat over the whole surface, and a repetition of the symptoms of the first exacerbation just described. As the disease advances, the pulse becomes increased in frequency, quickness and tension, but diminished in volume. Evidences of organic irritation, usually referable to the abdominal organs, become

developed. The tongue becomes more coated and acuminated, with a perceptible redness at its extremity and on its edges. More or less tenderness or abdominal pressure will now be felt, with gastric and intestinal irritability, attended in some instances with an *intolerable burning pain* most *intensely* felt during the *chill.* Percussion will generally detect an increase in the size of the spleen, and later the hypertrophy becomes obvious to the eye, particularly when the patient is in a sitting posture. Diarrhœa may now make its appearance, but generally its occurrence is postponed to a more advanced period; but it now may be observed that aperients of the mildest kind are prone to produce intestinal spasm and hypercatharsis, particularly *near the chill period.* The disease now progresses with aggravation of the cerebral and gastro-enteric symptoms, until from the third to the fifteenth day; it usually terminates without the interference of art, in three modes to be described under the following heads: 1st. *In Grave Remittent;* 2d. *In Adynamic Remittent;* 3d. *Intermittent Fever.*

Type.—It will be seen from this sketch of the disease, as it usually appears, that its common type is *Quotidian*, but owing to the fact that in many cases the exacerbations of the alternate days correspond with each other in presenting more violent reaction, and the intermediate paroxysms being milder, the majority of writers have assumed it to be of the tertian or double-tertian type. This, we think, is erroneous; for close observation on the part of the physician will almost invariably detect its quotidian character, as evinced by the diurnal occurrence of the stage of chill or congestion above described. In very few instances have we failed to discover it; indeed, it often happens that the *sensations* of chilliness and *coolness of the extreme parts*, are *more* perceptible when preceding the *mild* exacerbation, than previous to the *more intense reaction* of the alternate paroxysm.

Occasional Symptoms.—*Delirium* is sometimes present in the exacerbation, chiefly observed in children, and adults of a nervo-sanguineous temperament, but it is *usually* mild, of brief duration, declining with the fever, and disappearing entirely before the subsequent chill. *Sometimes*, however,

it is *violent*, *fierce* and *protracted*, forming apparently an alarming and dangerous feature. Even in those cases, however, it almost invariably disappears before the next paroxysm, thereby betraying the periodical nature of the affection. The passive, persistent delirium common to continued fever, is only seen at the termination of protracted cases, when it has assumed the adynamic character.

Coma is occasionally observed. Children and aged persons often manifest it in a partial manner, by a somnolent tendency in the exacerbation. In the latter class of patients it is sometimes complete and protracted. The patient lies on his back, with the eyelids opened, with a dull, fixed vacant stare. The breathing and pulse are not much accelerated, and may be entirely normal. The bowels are quiet, but the patient has copious, frequent and involuntary discharges of urine. He utters no articulate sound, and the function of deglutition seems to be lost. He receives fluids into his mouth, but does not betray any perception of savours; for all kinds are indiscriminately spat out in a perfectly natural manner, save without any reference to the place of deposit. These symptoms all disappear in the remission, and under proper treatment cannot be considered of very grave omen.

Convulsions sometimes occur in hysterical females and children; they are usually of brief duration, and even in the latter class of patients, are rarely a source of danger, in our experience, when they take place in the early part of an attack. Occurring, however, in the latter stages of protracted cases, they may be considered as very fatal symptoms.

Remittent Fever of Puerperal Women.—We desire to call the special attention of the young practitioner to the *peculiar phenomena* presented in *this fever*, when occurring in females soon after *accouchment*. It may be regarded as an etological axiom, that whatever tends to prostrate the nervous, or deplete the vascular systems, renders the organism strongly predisposed to endemic or epidemic influences. In puerperal women, both of these conditions unfortunately exist, and it is not therefore, surprising that they should be often attacked with this affection. The patient is generally seized with a

chill, which may be mistaken for the usual rigor after parturition, or that introductory to the febris lactea. This is soon, however, followed by an unusual, intense and prolonged reaction. The secretion of milk, if existing, is arrested, and the lochial discharge is partially or completely suspended. Intense dorsal and abdominal pains are experienced, and the uterus becomes evidently enlarged, rising above the pubis and very tender on pressure. As the exacerbation declines, the suffering abates, and the lochia may partially reappear in the remission, which is usually quite evident. Close observation will soon thereafter detect the *coolness* of the *extreme parts* antecedent to a second paroxysm, which is attended with augmented spinal and abdominal pain and tenderness. Increase of the uterine tumour ensues, the abdomen becomes tympanitic and will not bear the slightest pressure. The tongue becomes red, or red on its edges, and brown or black in its centre. Obstinate vomiting ensues; colliquative diarrhœa sets in, and coma or convulsions close the scene. It is clearly evident from these symptoms, that this complication may be mistaken for the puerperal fever of European authors. As far as the local symptoms and functional disturbances are concerned, the analogy is very evident, with this important distinction, however, that the local symptoms and the lesions of which they are the exponents, are the *consequences and not* the *cause* of the *febrile disturbance*. The paroxysmal character of the case, as shown by the marked remissions and exacerbations of fever, the regular increase and abatement, *pari passu*, of the local symptoms, and the phenomena pertaining to the stage of congestion or chill, will generally enable the observant physician to lift the mask from the features of the case, and to discern its distinctive character. Discomfiture to himself and death to his patient will probably result, if, erring in discrimination, he resorts to the usual antiphlogistic treatment of puerperal fever, whilst on the other hand, by the adoption of the proper means, the disease may be generally arrested. Concerning no disease, perhaps, are more antagonistic views promulgated than in regard to the nature and treatment of puerperal fever. In the opinion of the writer, these discrepancies can only be

explained by the fact that, although the disease as it presents itself to different observers, is similar in its general features, yet, arising in some cases from epidemic influence, and in some instances produced by a specific contagious miasm, it differs widely in its symptoms and causes, and requires as equally different modes of treatment.

Adynamic Remittent.—Remittent fever of a low grade and persistent character, strongly simulating continued fever, may present itself as a *sequel* to neglected or mismanaged cases of the ordinary form of the disease, or may occur *primarily*. Its approach is commonly, however, less abrupt than the usual form, the invasion being often unattended by a decided chill. In other respects the prodromata do not differ essentially from an ordinary attack. The pulse is of moderate frequency, not usually exceeding 100 per minute in adults. The exacerbations and remissions are indistinctly marked, the pulse in many cases varying only 8 or 10 beats in 24 hours. The heat of skin is moderate, and very often attended with some moisture during the greater period of the attack. When the disease is fully formed, the tongue becomes more or less pointed and red at its tip and on its edges, with a brown fur on its dorsum. The patient does not usually experience much acute pain. A dull headache, but not continuous, together with some abdominal uneasiness, are generally present. Diarrhœa sometimes occurs, and although it may be absent, a tendency towards it is manifested by a morbid susceptibility to the action of cathartics; the mildest aperients producing severe tormina, and frequent, copious serous discharges. As the disease advances, the tongue becomes dry, brown and even black, or parting with its coat, it presents a clean, red, shining surface. The abdomen becomes tympanitic, tense, and tender to the lightest touch, or as in some cases, although enlarged, yet it is soft, its walls yielding to the weight of the viscera; the skin being wrinkled, dry and desquamating, and the separate and relaxed muscular fibres imparting a sensation to the hand, as if the cavity was filled with lumbrici. The mind is usually clear in the first stages; as the disease advances, however, the intellect yields. Continuous muttering delirium, colliquative

diarrhœa, and sometimes intestinal hæmorrhage supervene (the blood in the latter instance being fluid, uncoagulable and horribly offensive), under which the patient soon succumbs.

GRAVE REMITTENT FEVER.—SYNONYMES, *Congestive Fever, Pernicious Fever, Algid Fever.*—We now proceed to describe a grade of remittent fever that may be justly ranked with the most fearful and fatal scourges which afflict humanity. In the mild, uncomplicated phase of this affection predescribed, nature seems to have resisted the action of the morbific cause with energy and promptness, but in this the vital power seems overwhelmed and powerless, and unassisted, too often surrenders.

Grave remittent may occur as a primary form of disease, occurring suddenly, without premonition, or as more generally the case in this region,* it commences with the symptoms of mild remittent or intermittent fever, when either from the action of its natural cause, or more frequently from exposure or improper treatment, such as ill-timed depletion or purgation, it suddenly presents the grave and alarming symptoms which characterize it, the most conspicuous of which are a prolonged cold stage, and failure or disappearance of the pulse. The symptoms, however, in other respects often widely vary, and in my opinion may be classed under three heads, viz: Those referable to and arising from a perverted action of different portions of the cerebro-spinal axis, as follows: 1st. Symptoms arising from congestion of the cerebrum. 2dly. Those arising from congestion of the cerebellum, pons variolii and medulla oblongata; and 3dly. Those arising from congestion of the spinal cord. We deem it proper, however, to describe the symptoms usually present in all of these modifications. The phenomena which forcibly arrest the attention of the observer, are those presented by the state of the skin and the pulse. The patient is cold, the features are sharp and shrunken, and the surface shrivelled. In some cases he is merely pale, but in the worst cases the skin is of a dusky, purplish hue. It may be dry, but usually it is damp, or even wet with exhalation, which is sometimes glutinous in its character. It may be deficient in sensibility to such an extent that the common external irritants, such as

* The Roanoke Valley of Virginia and North Carolina.

rubefacients, sinapisms, and blisters, produce no impression. This condition of the skin *may* exist over the *whole* body, but *usually* within my observation, it does not pervade the trunk, being confined to the upper and lower extremities, the nose, cheeks and ears, the rest of the head and the body being of febrile heat. The pulse is very frequent and small, and in some rare instances disappears entirely from the wrist. The respiration is more or less disturbed. The patient complains of a sense of oppression about his chest, he sighs often, suffers from sensations of internal heat, demands cold drinks, desires to be fanned, and strenuously objects to any covering being placed on his clay-cold limbs. The cardiac sounds and impulse are normal, and in some cases more distinct than in health, where the *coldness* of the surface is confined to the *extreme parts*, but when it pervades the whole periphery, the sounds and impulse are indistinct and feeble. The strength of the patient is often remarkable, so that he is able to assist himself, and even to walk about his room for some time. Diarrhœa is sometimes present, but is not a constant symptom. The duration of the cold stage varies very much, but rarely continues beyond 8 or 10 hours; it however may endure *much* longer.

The Exacerbation.—The reaction may be perfect or partial. The heat gradually returns to the surface and extends to the extremities, the pulse becomes less frequent and more expanded, the breathing becomes disembarrassed; the symptoms common to the milder grade being present in ratio with the development of the febrile action. This stage endures from 10 to 24 hours, and is succeeded by the stage of congestion, which in turn yields to a reaction more or less distinct, or is fatal, the disease having a tendency to terminate on the third, fifth and seventh days mortally, or subsiding into the mild form, or in intermittent fever.

Congestion of the Cerebrum.—*The Cold Stage.*—The patient may be suddenly seized with symptoms of inordinate sanguineous determination to the superior portion of the encephlon, but usually there are some premonitions. He complains of pain in the frontal region, of an acute throbbing character. The intellect is confused and wandering, and he

is disposed to sleep, the drowsiness gradually increasing to coma. He seems to be in a profound sleep, but sometimes can be aroused by shaking him forcibly and calling aloud, when he may reply in monosyllables and intelligibly, but instantly sinks into stupor again. He breathes softly, regularly, and but little more frequently than in health. His extremities are cold and of a bluish tint, the coldness extending to the pelvis and axillæ, the trunk and head being of febrile warmth. In some instances the whole surface is cold, but these are rare. The skin is usually dry or but slightly moist, this variety not being usually attended with colliquative sweat. The pulse is frequent and small.

The Exacerbation.—The pulse still indicates evidences of an impeded circulation, and rarely regains its normal volume or force, the breathing becomes more accelerated, the patient grows restless, and gradually regains his faculties. He now complains of cephalic pain, of nausea, and occasionally vomits, and the whole surface becomes warm and even hot. As the exacerbation declines, the patient becomes more comfortable, and himself and friends look forward to a speedy convalescence, *but this is a deceitful calm.* The cold stage recurs with aggravation of the cerebral symptoms, and increased prostration of the general powers. In some cases, however, without assistance the second *cold stage* assumes a *mitigated* character, gradually subsiding into mild remittent, or the intermittent form. When the disease however continues unabated, the *third* paroxysm is prone to prove fatal, but the termination may be postponed to a more advanced period.

Congestion of the Cerebellum, &c.—*The Cold Stage.*—Unlike the variety just described the intellectual functions in this are undisturbed. The patient complains of fixed pain in the occipital region; he is very restless, constantly shifts his position and complains of great difficulty of breathing, and often declares, "he will die for the want of air." He experiences a distressing sense of internal heat and oppression. The respiration is irregular and laborious, the expirations being forcible and prolonged. The skin is cold, of a purple and mottled appearance, bedewed with moisture.

This state of the surface is usually confined to the extremities, the remaining surface being above the natural temperature. The *tongue* is dusky and expanded, and in extreme cases it is *cold*, as well as the *breath*. The bowels are generally sluggish, but the urine is copious and limpid. The patient often arises from his bed, but his *gait* is *tottering* and *unsteady*, and he sometimes falls to the floor suddenly, as if stricken lifeless, but instantly arises again, thereby proving that it is not simply from *debility* that he is unable to retain the erect position, but from a *loss of control* over his *muscular movements*. The pulse is very frequent and small; nausea is not usually present, but the patient makes frequent efforts to vomit, thinking thereby to remove the thoracic oppression. Insensibility of the stomach to the action of medicine is a prominent condition in this stage, which rarely endures more than ten hours.

The Exacerbation.—The reaction gradually ensues, and in proportion to its development, the symptoms belonging to the cold stage disappear. The respiration becomes more regular and free, the pulse slower and expanded, the skin becomes warm and even hot, and the pain in the occipital region mitigated; nausea and vomiting are apt to ensue, and the stomach responds to the action of medicine readily. Without interference, the cold stage again recurs, the second paroxysm often proving fatal.

Spinal Congestion.—*The Cold Stage.*—This is attended with symptoms of a milder character and is of shorter duration than the preceding varieties of the grave form. The spinal pain is confined to the dorsal and lumbar regions, and is *not* of an acute character, save when *pressure* is made upon the *affected region*. Unlike the former varieties, in this the intellect is unaffected and the respiration free.

The diminished temperature is usually confined to the extremities, and rarely extends beyond the knee and elbow; nor is there usually present any superabundance of moisture, the cold surface being dry or merely damp, the remaining surface (always excepting the facial extremes) being above the natural heat. The patient (in this as in the former varieties) is ignorant of the coldness of the extremities but com-

plains of heat; is restless and suffers *violently* from *spasmodic pain in his bowels*, which are usually costive. To such an extent are the *abdominal* pains present, that the *disease* has been *mistaken* for an attack of *colic*. The pulse is not usually much accelerated, but is irregular during the paroxysms of abdominal pain. This stage rarely exceeds one or two hours in duration.

The Exacerbation.—Although the reaction is usually decided, the fever is rarely intense. The skin becomes warm and expanded, and often moist. The pulse, unlike as occurs in the former varieties, now usually becomes *morbidly slow*, and is *characteristic* of this phase of remittent. This condition of the pulse, unless closely observed and counted, is apt to throw the inexperienced off their guard. *I have known physicians of no mean skill, to declare the patient was but slightly ill*, but who nevertheless *expired in the next paroxysm*. More or less tenderness will be found on pressure of the abdomen, chiefly in the umbilical region, but the spasmodic pains are always mitigated, and sometimes entirely disappear in this stage, which is more prolonged than in the other varieties A complete remission late in the night or during the morning hours, often ensues, in which the patient sleeps quietly and presents so few marked indications of disease as to attract but little attention. The cold stage however reappears, attended with more aggravated symptoms. The abdomen becomes enlarged and exquisitely tender, and the agonizing abdominal pains return.

As the disease advances, the abdomen becomes tympanitic. Serous, or as is more often the case, hæmorrhagic discharges ensue, the blood being black, liquid and offensive; the coldness extends over the whole surface, a clammy sweat breaks out, the features become cadaveric, and the patient becomes delirious or sinks into coma and expires. The fatal termination is, however, usually postponed beyond the 7th day.

Diagnosis.—From the foregoing sketches of the various forms, grades and complications of this protean affection, it is evident that the inexperienced observer will often find much difficulty in discerning its true character. The peculiar traits of the disease in puerperal women have been

already pointed out, and the various phenomena incident to the different grades described, which we hope will be of some aid to discrimination in the majority of cases, but as *remittent often simulates continued fever*, we deem it necessary briefly to indicate the distinction.

A well-marked case of either disease would rarely be mistaken by an observer of educated perception, but under the head of adynamic remittent, we have endeavored to depict a form which bears enough resemblance to typhoid fever to be often confounded with it. Like typhoid fever, adynamic remittent may appear at any season of the year. It is rarely attended with much acute suffering, and is protracted in its duration. The resemblance is rendered more striking by the evidences of abdominal lesion in both, the tongue being inclined in either to be red and dry, and diarrhœa and meteorism being symptoms common to both. Here, however, we think the analogy ends. In remittent there is an absence of that peculiar, stupid, vacant expression, deafness, eruption and the irregular exacerbations of continued fever. Epistaxis and sudamina, so commonly present in typhoid, are rare in remittent fever. *The chill of remittent differs from that of any other disease whatever.* In typhoid fever sometimes there is a peculiar condition of the patient, which, as we have never seen described, we think it proper to notice. The patient complains of a sensation of intense cold, and in some instances will shiver as with an ague. These nervous shudderings, or instances of extreme nervous irritation as we deem them, may occur frequently during the day or night with great irregularity, disappearing for several days together, and then returning again. So far as our observation goes, these rigors are unattended with the slightest diminution of temperature of any part, the whole surface being rather above the normal standard, even to the most extreme parts; indeed we have noticed these paroxysms to occur in many instances when the patient was in a warm perspiration. It is also worthy of notice, that these chills (as writers term them) are not followed by any perceptible increase of febrile excitement, which is an invariable sequent to the chill of remittent. The pulse, although frequent in both diseases, yet is

attended with fluctuations so different from each other in the respective fevers, as to present a most invaluable aid in diagnosis. Cullen, Parr, Good and others, have declared that in continued fever there are two diurnal exacerbations, whilst in remittent there is only one. We have often verified the truth of their definition, and we feel assured that in doubtful cases the peculiar character of the fever will be detected by this test. The pulse should be counted at short and regular intervals and the thermometer applied throughout the day and night. If the case is continued fever, the fever will arise and decline twice, the first exacerbation occurring in the morning and the second in the afternoon or night In remittent, only one exacerbation will thus be discovered.*

The perspiration and urine have a peculiar odor in typhoid, which I have never observed in remittent fever. The intestinal evacuations are infinite in their varieties in both diseases, but there is a discharge of a peculiar character in the majority of cases of typhoid which I have never seen in remittent. They are of a shining, reddish-brown appearance, about the consistence of molasses, and seem glutinous in their nature, adhering to the sides of the vessel, and are very offensive. The viscid, black, green, inodorous, bilious evacuations which almost *certainly* denote a *favorable termination* in remittent, I have *never* seen in typhoid fever. In the latter disease, healthful and perfect digestion often returns, and natural and consistent fæces are evacuated sometime before the disappearance of febrile excitement. These we have never witnessed in remittent until convalescence was established. Intestinal hæmorrhage is often present during the course of typhoid fever, but, as a rule, attends only the termination of, and rarely occurs in, remittent. In the former it is often salutary, the blood being of a bright red color, coagulable and healthy in appearance. In the latter it is fluid, black and offensive, and is usually indicative of a fatal termination.

* It has been my rule, when in doubt as to whether the patient has remittent or typhoid fever, to treat it as remittent fever for 48 hours. It will mitigate the symptoms if it is typhoid fever, but *not* cut it short. If it is remittent it will jugulate the disease within that time. In typho-malarial fever it will prove beneficial by eliminating the malarial element, *often the most dangerous factor*, and if not continued more than two days can do no harm, but often moderates the disease.—O. F. M.

I have not thought proper to recapitulate all of the diagnostic signs known, which would be proper in a treatise, but supererogatory in a contribution. It is believed that the foregoing will almost invariably enable the practitioner to detect the proper character of the case.

Nature of Remittent Fever.—As we design this to be a practical paper, we purposely shun the metaphysical labyrinth to which a discussion concerning its cause inevitably tends, a controversy perhaps more protracted than profitable; but an enquiry into the conditions of the organism, as morbidly impressed, comes fully within the proper scope of the present article, as it has an important bearing on the therapeutics of the disease. The attention of the physician can not fail to be first and most forcibly directed to the apparent *unequal distribution of blood* in this malady. He observes a *constant tendency* in the vital current to *retrocede* from the *extremities* to the *trunk* and *head*, and in *grave* cases, from the *whole surface* to the *internal organs*. It is true this tendency is not so conspicuous in the mild form of the disease; for there the natural powers of the system seem competent to resist successfully the *centripetal tendency* of the blood. The symptoms presented in the milder varieties, were, therefore, of a mixed or two-fold character. First, those presented by the action of the morbific cause; and secondly, those displayed by the resistance of the organism against it. In the *more violent form* of the disease, which we have described under the name of *grave remittent*, the phenomena presented are those *chiefly* induced by the *immediate agency of its cause*, and furnish to the scientific observer the *proper phase* for the *study* of its *pathology*. It is from the symptoms, therefore, of this, the most perfect species of the disease, that we shall chiefly endeavor to illustrate its nature.

A person in the enjoyment, apparently, of perfect health, is suddenly, without warning or assignable cause (as is often the case), prostrated. He is cold, but knows it not, but on the contrary has all the gestures of a man oppressed with heat. The blood circulates feebly on the surface, the cutaneous vessels seem almost to have lost their contractility,

and the fluid portions of the blood exhale through their relaxed parieties. The skin is also deprived to a great extent of its sensibility, the most powerful irritants failing to produce any impression. Where is the missing blood? It has not been lost. The colliquative sweat and diarrhœa might indeed subtract from its mass, but in the gravest cases these are often absent! The vital current has passed from our immediate vision, it is true, but it must be somewhere. The axiom cannot be controverted, that in the system there is a certain quantity of blood, and if the normal quantity is absent in one part, it must necessarily be present in excess in another. Happily the overburdened organs speak in a language not to be mistaken. The cerebral pain, the somnolence deepening into coma, with the additional symptoms pertaining to the first variety, betray the congested condition of the cerebral vessels, whilst in the next variety, the cerebellic pain, the difficult and irregular respiration, the tottering gait and sudden temporary loss of motion, denote the inferior portion of the encephalon as the seat of undue phlogosis; and lower down, the spinal pain, with a constantly corresponding torpor and spasm of the intestines, betray an analagous condition of the spinal cord. Of the cause of this inordinate determination to the nervous centres, as we have premised, we do not propose to treat, but that it exists, we think clearly deducible from the symptoms. We deem this most important knowledge, as it indicates an important point in the system of treatment to be pursued. It explains the salutary action of revulsives and derivatics, and it indicates the benefit to be derived from local bleeding from the cerebro-spinal regions. That lesions of the stomach, liver, spleen and intestines, are often observed *post mortem*, cannot be denied, and in portraying the symptoms, we have not failed to exhibit the evidences of such affections during life, but these are proven to be secondary results from two conclusive facts; first, that the symptoms of lesion are not present at the inception of the disease, nor during its course, save when the febrile reaction is decided; and secondly, that they soon disappear after the paroxysms are arrested. But we should not underrate the importance of the fact that

lesions occur because they are sequents of the general pyrexia. They often present barriers to the success of treatment, and experience teaches us that in our efforts to cure, due attention should be given to them, and proper measures adopted for their removal.

Treatment of Mild Remittent.—Active measures will be found usually unnecessary during the chill, as the vital powers are fully competent to produce reaction. I disapprove of the method of torturing the patient with heavy bedclothes and hot applications in this form, but consult his feelings in regard to them and allow cool drinks in moderate quantity.

In the Exacerbation.—If the pulse is hard, or full and resisting, especially if attended with intense cerebral or spinal pain, a moderate *bleeding* from the arm will produce great relief, but this will be *very rarely* necessary. Local bleeding will be generally found sufficient, and is an invaluable adjunct. Leeches to the temples, or cups to the occipital or spinal regions, may be freely applied as the determination may indicate. If nausea and vomiting, or other symptoms of gastric irritation be present, leeches or cups to the epigastrium will be followed by great relief, and if these should be succeeded by a simple enema, under their conjoined action the bowels will gently respond, and add greatly to the comfort of the patient. Cold drinks, ice, the effervescing draught, and lemonade, may be freely allowed. Under this treatment the patient will find great alleviation from suffering, and the intensity of the fever will be diminished. At bed time, say at 9 or 10 o'clock, it is almost our invariable rule to administer a cathartic dose of calomel and rhubarb, of 10 or 12 grains of each. At some period before or after midnight, the fever will generally be found more or less to decline. We prefer this period for the commencement of the abortive means, because our experience teaches us that quinine, the principal remedy, is then better borne, and produces its salutary effects in a more decided and complete manner than at any other time. We now, therefore, usually administer from 10 to 20 grains at a single dose, in pills, or diffused in a wine-glassful of cold water. *We regulate the*

dose by the degree of fever present. If it is *intense*, we administer the *larger quantity;* if *very moderate*, the *lesser will answer.* Under the combined action of the mercurial and quinine, free evacuation of the bowels will usually occur, but rarely excessive. Three or four hours are now suffered to elapse, during which the topical bleeding is repeated if the local symptoms do not yield. The condition of the patient will now be found generally much improved. The cerebro-spinal pain is either removed or mitigated, the pulse less frequent and more soft, the skin relaxed and moist, and the gastric irritation subdued. We therefore repeat the quinine in diminished doses of 5 or 6 grains every 3 or 4 hours, until the period of chill has passed, generally exhibiting altogether from 25 to 40 grains before that time. *In* cases attended with much *gastric irritation* or *diarrhœa*, the addition of a full dose of opium, say 1½ or 2 grains to 10 or 12 grains of the submuriate, at bed time, instead of the rhubarb, forms an excellent combination, which will enable the stomach to retain the quinine, afterwards administered with more certainty. Under this simple plan of treatment, remittent fever, as it appears usually in this section, is certainly and safely cured. We have in this manner arrested the disease in many hundred cases, in one night. Owing, however, to the peculiar liability of the affection to relapse, or terminate in protracted intermittent, we usually continue treatment. We think it advisable to prescribe a mercurial alterative of calomel or mass hydrarg. for 2 or 3 successive nights, followed by 8 or 10 grains of quinine or 25 or 30 drops of oil of turpentine in divided doses on the succeeding mornings. In cases attended with coma, delirium or convulsions during the exacerbation, topical bleeding will be freely required, and the application of cold. We have, however, been more gratified with the effects of the *cold douche*, in these complications, than with any other remedy. A full dose of calomel should be given as soon as practicable, followed by stimulant enemata. In mild cases, however, it will not be necessary to resort to very active treatment, as these symptoms gradually yield with the subsidence of the paroxysm. In this disease occurring in puerperal women, in

addition to the general plan detailed, free local depletion over the uterine region is practised, succeeded by warm fomentations. The local symptoms disappear readily with the arrest of the paroxysms. In the form described under the title of adynamic remittent, occurring as a primary form, this mode of treatment will usually suffice, but in protracted cases, a different practice will be found necessary, as quinine is not borne well, and the antiphlogistic remedies detailed are contra-indicated. Minute doses of calomel combined with opium, will usually be found of great service, along with the employment of the oil of turpentine, which may almost be regarded as a specific in this variety. It is more suitable than quinine in this condition, as it is better tolerated, and whilst it possesses febrifuge properties very similar to the alkaloid, it also exerts a happy influence over the gastric and intestinal irritation so commonly present. It may be given in doses of 10 to 20 drops in emulsion, repeated every 3 or 4 hours until the symptoms yield.

It should be persisted in until the patient is fairly under its influence, unless the effects it occasionally produces, viz., hæmaturia, strangury, or its peculiar intoxication, supervene, when of course it should be discontinued. It would require too much space to speak of this remedy in this place, as it deserves.

Treatment of Grave Remittent.—*The Cold Stage.*—In this grade external means are all important. Warm applications are to be assiduously made to the parts reduced in temperature, together with stimulating frictions. These should be freely applied to the whole length of the spinal column and the extremities. A large blister should be placed over the epigastrium, and if the head is affected, another to the nape of the neck.—*Medicine.* To produce reaction along with these applications, I prefer enemata of quinine. The plan preferred, is to dissolve 10 grains in a wineglassful of weak solution of capsicum (made by adding 20 grains of the latter to a pint of boiling water), with the addition of a few drops of elixir of vitriol. This is thrown up the rectum every half hour until symptoms of reaction ensue. If diarrhœa has been or is present, I prefer enemata of qui-

nine and laudanum, the former first dissolved in water by the addition of the acid, By these means alone, cases apparently hopeless have been rescued. In a case of very protracted cold stage, a combination of 1 grain of calomel, 1 grain of quinine, and ¼th of a grain of opium, together with frequent doses of camphor water, induced a speedy reaction. The oil of turpentine in spinal congestion is also an excellent remedy; 10 or 15 drops alone or combined with laudanum, may be given every 1 or 2 hours, or more frequently.

The Exacerbation.—The reaction is sometimes intense. When this occurs, I have ventured on the abstraction of blood from the arm in moderate quantity with decided benefit, but this is seldom necessary. The case now only requires to be treated as the milder grade, save perhaps with a more liberal use of quinine. A moderate dose of calomel (10 or 15 grains) alone (or combined with 1 or 2 grains of opium, if there is much gastric irritation or diarrhœa),* is followed in 2 or 3 hours by a full dose of quinine (20 grains), and repeated in doses of 5 to 10 grains every 3 or four hours until 35 or 40 grains are taken. The medicine should be so regulated, that the last dose may be taken 2 or 3 hours before the expected paroxysm. I have never seen a chill or cold stage recur after 40 grains of Farr's† sulphate of quinine had been retained. Although the patient may be generally considered out of danger when the paroxysms have been arrested, yet I esteem it to be good practice to prevent relapse by placing the patient on a gentle alterative course, and by repeating the quinine in diminished quantity for several days thereafter.

*Quinine is often defeated in its action by the presence of gastric irritation and inflammation. In such cases it may be given by the rectum. When the intestinal mucous membrane is also in a state of phlogosis, the remedy may be employed hypodermically. Its effects, when administered in this manner, are prompt and decided.

The following is the excellent formula of M. Dodeuil for its hypodermic use:

Distillled water—20 parts.
Sulphate of quinine—2 parts,
Tartaric acid—1 part.

One-third less than *the usual dose of quinine* is required when given by the *skin.* See the author's paper on this subject in *Virginia Clinical Record,* October, 1871, p. 200.

†Now Powers & Weightman's, his successors, who, in my opinion, make the best article in the world. I cannot too warmly express my thanks to them for supplying a pure and reliable agent that has enabled me to save a great many lives. They deserve the highest honor and prosperity.—O. F. M.